|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Customer** | | | | | | | | | | | | **Job No.** | |  | | | | | | | | |
| **Reference No.** | | | |  | | | | | | |
| **Address** | | | | | | | | | | | | **Proposal No.** | | | |  | | | | | | |
| **Plant Location** | | | | | | | | | | | | **Date** | | **15/11/11** | | | | **Rev.** |  | | | |
| **Service of Unit** | | | | | | | | | | | | **Item No.** | | | | | | | | | | |
| **Size** |  | | | | **Type** |  | | | **Connected** | | | | | | | **parallel** | | |  | | | **series** |
| **Surf/Unit (Gross)** | |  | | | | **m2** | **Shells/Unit** | | **Surface Shell (Gross)** | | | | |  | | | | | | | | **m2** |
| **PERFORMANCE OF ONE UNIT** | | | | | | | | | | | | | | | | | | | | | | |
| **Fluid Allocation** | | | | | | | | **Shell Side** | | | | | | | **Tube Side** | | | | | | | |
| **Fluid Name** | | | | | | | |  | | | | | | |  | | | | | | | |
| **Fluid Quantity** | | | | | **Total** | **kg/h** | | **IN** | | | **OUT** | | | | **IN** | | | | | **OUT** | | |
|  | **Vapour** | | | |  |  | |  | | |  | | | |  | | | | | |  | |
|  | **Liquid** | | | |  |  | |  | | |  | | | |  | | | | | |  | |
|  | **Steam** | | | |  |  | |  | | |  | | | |  | | | | | |  | |
|  | **Water** | | | |  |  | |  | | |  | | | |  | | | | | |  | |
|  | **Noncondensable** | | | |  |  | |  | | |  | | | |  | | | | | |  | |
| **Temperature, In/Out** | | | | |  | **˚C** | |  | | |  | | | |  | | | | | |  | |
| **Density** | | | | |  | **kg/m3** | |  | | |  | | | |  | | | | | |  | |
| **Viscosity** | | | | |  | **centipoise** | |  | | |  | | | |  | | | | | |  | |
| **Molar Mass, Vapour** | | | | |  | **kg/kmol** | |  | | |  | | | |  | | | | | |  | |
| **Molecular Mass, Noncondensables** | | | | | | **kg/kmol** | |  | | |  | | | |  | | | | | |  | |
| **Specific Heat** | | | | |  | **kJ/kg K** | |  | | |  | | | |  | | | | | |  | |
| **Thermal Conductivity** | | | | |  | **W/m K** | |  | | |  | | | |  | | | | | |  | |
| **Latent Heat** | | | | |  | **kJ/kg** | |  | | |  | | | |  | | | | | |  | |
| **Inlet Pressure** | | | | |  | **bar (abs)** | |  | | | | | | |  | | | | | | | |
| **Velocity** | | | | |  | **m/s** | |  | | |  | | | |  | | | | | |  | |
| **Pressure Drop** | | | | |  | **bar** | |  | | |  | | | |  | | | | | |  | |
| **Fouling Resistance (Min.)** | | | | |  | **m2 K/W** | | **-** | | | | | | | **-** | | | | | | | |
| **Heat Exchanged** | |  | | | | | **kW** | **MTD** | | | | | | | | | | | | | | **˚C** |
| **Transfer Rate, Service** | | | |  |  |  | **Dirty** |  |  |  | | **Clean** | | | |  | | |  | | | **W/m2 K** |
| **CONSTRUCTION OF ONE SHELL** | | | | | | | | | | **Sketch (Bundle / Nozzle Orientation)** | | | | | | | | | | | | |
|  |  |  | |  |  |  | |  | |  | |  | |  | |  | | |  | | |  |
| **Design/Test Pressure** | | | |  | **bar(g)** |  | |  | |  | |  | |  | |  | | |  | | |  |
| **Design Temperature** | | | |  | **˚C** |  | |  | |  | |  | |  | |  | | |  | | |  |
| **No. Passes Per Shell** | | | |  |  |  | |  | |  | |  | |  | |  | | |  | | |  |
| **Corrosion Allowance** | | | |  |  |  | |  | |  | |  | |  | |  | | |  | | |  |
| **Connections Size and Ratings** | | | | | **In** |  | |  | |  | |  | |  | |  | | |  | | |  |
| **Out** |  | |  | |  | |  | |  | |  | | |  | | |  |
| **Inter.** | **-** | | **-** | |  | |  | |  | |  | | |  | | |  |
| **Tube No.** |  | **OD** |  | | **mm** | **Thk** |  | **mm** | **Length** |  | | | **m** | **Pitch** | | | | | **mm** | | | **Square** |
| **Tube Type** | | **U-tube** | | | | | | | **Material** | **Carbon Steel** | | | | | | | | | | | | |
| **Shell** |  | **ID** |  | | **OD** |  |  | **m** | **Shell Cover** | | |  | |  | |  | | |  | | |  |
|  |  |  | |  |  |  |  |  | **Channel Cover** | | | | |  | |  | | |  | | |  |
|  |  |  | |  |  |  |  |  | **Tubesheet - Floating** | | | | |  | |  | | |  | | |  |
|  |  |  | |  |  |  |  |  | **Impingement protection** | | | | | **None** | | |  | |  | | |  |
| **Baffles-Cross** | | **None** | |  |  | **Type** | |  | **% Cut** |  | | **Spacing c/c** | | | | **Inlet** | | |  | | | **mm** |
| **Baffles-Long** | | **None** | |  |  |  |  |  | **Seal Type** | | |  | |  | |  | | |  | | |  |
| **Supports-Tube** | |  | |  | **U-Bend** | |  |  |  |  | | **Type** | |  | |  | | |  | | |  |
| **Bypass Seal Arrangement** | | | |  |  |  |  |  | **Tube-Tubesheet Join** | | | | |  | |  | | |  | | |  |
| **Expansion Joint** | |  | |  |  |  |  |  | **Type** |  | |  | |  | |  | | |  | | |  |
| **••V2 - Inlet Nozzle** | |  | |  |  |  | **Bundle Entrance** | | |  | | **Bundle Exit** | | | |  | | |  | | |  |
| **Gaskets** |  | **Shellside** | | |  |  |  |  | **Tubeside** | | |  | |  | |  | | |  | | |  |
|  |  | **Floating Head** | | | |  |  |  |  |  | |  | |  | |  | | |  | | |  |
| **Code Requirements** | | | |  |  |  |  |  |  |  | |  | | **TEMA Class** | | | | |  | | |  |
| **Weight/Shell** | |  | |  |  | **Filled with water** | | |  |  | | **Bundle** | |  | |  | | |  | | | **kg** |